

**Remarks**

**Drawings:**

The examiner objected to the drawings have the reference character “25” in the drawings and not identified in the specification. The specification has been amended in Para (0043 line 1, from “The next step is to” to “The next step **25** is to”. The drawings have been removed from the corrected amendment as being not required in the amendment.

**Specification:**

The examiner objected to the specification because the content and arrangement did not conform to the rules. However, as noted in a telephone conversation with the examiner and the examiner’s supervisor, the content and arrangement of the specification was not entirely controlled by me as I was a voluntary beta tester for the USPTO’s first electronic filing system and an involuntary beta tester for the second electronic system. No prior communication was received by me as to the problems with the format and arrangement of the specification which was filed five (5) years ago.

However, I have reformatted the specification, abstract, claims and figures and have amended the specification with the first paragraph now having a statement on the Field of the Invention. I will file all of this with this Response to the Office Action and attempt to attach each of the above named sections as separate pdf files to the response as well.

I also added a Field of the Invention paragraph to the beginning of the specification.

**Double Patenting:**

The examiner has rejected claims 1 and 13, (of which claim 13 is withdrawn), of the present application (10/710,385) over claims 1, 6, 13 and 18 of co-pending application 10/710,384, both filed on the same date, and rejected the present claim 1 over co-pending application 10/710,396 claim 1, filed after both the '384 and '385 applications, all by the same applicant. First, applicant would argue that the specifications and the pre-amble of the claims recite differing subject matter. The '385 application stating "A method for scheduling ... jobs and/or work", the '386 application stating "a method for determining ... lot sizes" and the '396 application stating "A method for determining if proposed modifications to existing planned activities are supportive of and consistent with an entity's strategic objective." As is well known in the art, the logic, manual methodology or software utilized in MRP systems for determining the order for scheduling work are completely separate routines from the logic for determining the lot size for a given part or product that should be run. Although they are both a part of MRP, they are un-related in any other sense and are determined independently of each other. In addition, the steps of claim 1, lines h through m of the '385 application are completely different from claim 1 lines d through i of the '384 application. Similarly, claim 1 line j through o of the '396 application are different to the '385 claims and relate to differing pre-ambls.

Nor does applicant believe that there is any obvious double-patenting as the present methodology and technology go to two completely different processes – the one being "how many of these items should I make or purchase?" and the other being "of all these jobs I have to run, what is the best sequence to run them in?" A user could choose to make determinations on the order to run things in and never cross over to the quantity issue (or vice versa) as the thought processes and logical determinations are separate and distinct processes.

While applicant admits that all three applications begin with defining the strategic objective of an entity and determining the measure for that strategic objective, beyond that the claims all recite different and distinct subject matter, separable from one another.

However, applicant is filing a terminal disclaimer to resolve this issue without admitting there is any obviousness double patenting.

**Claims:**

Claims 3, 4, 7, 8, 11, 12, 13, 14, 15 and 16 have been cancelled instead of being “withdrawn” as in the prior amendment.

**Claim Rejections Under 35 U.S.C. 112**

Claims 1, 2, 5, 6, 9 and 10 have been amended to clearly and distinctly claim the subject matter of the present invention. As per the terms “planning period”, “dependant work”, “independent work”, “work”, “constraints” and “work queue”, these terms are specifically defined in Para (0018) of the specification which is the first paragraph under the Detailed Description of the Invention heading. In many instances where the claim stated “the said” has been modified to “said”.

As to the “primary strategic objective” and the “primary strategic objective measure” the meaning and terms of these are described in Para (0024 through 0027) which can be viewed above. Para (0025) defines why it is important to prioritize and then select a primary strategic objective and, in a similar fashion, why it is important to choose the appropriate measure for the primary strategic objective.

Claim 1, the preamble has been modified by adding the term “independent and dependant jobs” and the term “activities” deleted for clarity. “a plurality of” has been added to (a) for clarifying the strategic objectives. “from said prioritized strategic objectives” was added to (c) for clarity. In (d), “the possible” was replace with “a plurality” for clarity. In (e), the term “one of said measures from said list of a plurality of measures to be” was added for clarity. The original part (f) was deleted and incorporated in part (m). Inn the new part (f) “defining” was replaced with “listing”, “the possible” was replaced with “a

plurality of” and the term “jobs and/or” was added for clarity. In the new part (g) “said jobs and/or was added” as was “from said listing of a plurality of measures to be used for scheduling said jobs and/or work”. In new part (h) “defining the possible” was replaced with “listing a plurality of” and after the term “constraints” was added the word “categories” and after the term “scheduling said” was added the term “jobs and/or” for clarity. In new part (i) after the term “constraint” was added “category from said list of a plurality of constraint categories” and the term “jobs and/or” was added in front of the term “work”. In new part (j), the term “listing a plurality of constraints within said selected constraint category and” to the beginning of part (j), the terms “within said selected constraint category” and “jobs and/or” were added to the end of part (j) for clarity. In new part (k), the term “using said primary measure for said scheduling of said jobs and/or work” to the beginning of part (k), the term “calculating” was changed to “calculate” and the terms “first” and “within said selected constraint category” was added to the existing term “said prioritized constraint” for clarity. In new part (l) the term “prioritizing said calculated work schedule measures in (k) above by largest work schedule measure first for said first prioritized constraint;” replaced the prior verbiage. In new part (m), the term “scheduling all of said independent jobs and/or work by said prioritized calculated work schedule measures, then scheduling all of said” to the beginning of part (m), deleting the terms “order” and replacing it with “work by said prioritized calculated work schedule measures” and deleting the term “based upon .....work schedule measures”. Replacing all of part (n) with the old part (o) and adding “prioritized” to “constraints” and replacing “orders” with “work”.

With these changes to claim 1, the definitions provided in the specification noted above along with the definitions provided in a standard dictionary, the explanation provided in the specification as to the methodology employed in scheduling work and these terms as being well know to those skilled in the art, it is believed this claim has clarified and particularly pointed out and now distinctly claim the subject matter of the present invention.

Claim 2. With the amendments to claim 1 and the similar amendments to claim 2 verbiage, for clarity and consistency, it is believed that claim 2 is in proper format for evaluation.

Claims 5 and 6. Similar to claims 1 and 2, the verbiage has been modified to more clearly and distinctly point out what is being claimed per the present invention.

Claims 9 and 10. These claims have been modified in their verbiage to particularly point out and distinctly claim the subject matter of the invention. The term “computer program” in the preamble has been changed to “computer-readable medium encoded with a computer program”, the term “embodied on a computer-readable medium” and “such that the operational side of the entity is supporting and consistent with the said strategic direction of the entity” and “a data structure instantiating code segment that establishes a storage record in memory having” have been deleted and the term “determination” has been replaced with “computer program. New parts (a) through (e) and (j) and (k) have been added for clarity. New parts (f) through (i) and (l) have been modified for clarity and to specifically point out what is being claimed. Part (l) has changed the term “steps i through v” to “steps f through k”.

Amended claim 10 has been modified to comply with the changes made to claim 9.

#### **Claim Rejection Under 35 U.S.C. 101**

Claims 1 – 4. As is well known in the art, any entity, including manufacturing and distribution entities, will have a list of work or jobs that need to be accomplished in order to be a viable entity. This work, or jobs, must be put into some type of order, as determined by someone or some program, in order to accomplish a multitude of things. What it accomplishes varies depending upon the stakeholder that is asked. For the customer, the accomplishment of a first job may satisfy that customer’s needs while the

failure to do a second job, in order to do the first job, may cause the second customer to go unsatisfied. For the entity, the order of the jobs may well determine which customer they choose to satisfy and who they will not satisfy. The order of jobs may also determine how profitable a company will be. For the individual or group working on the job, the order of the work may make the individual or group more efficient or less efficient. As a result, how work is ordered or scheduled to be worked on and completed is important to a variety of people for a variety of purposes.

As such, there is a distinct and varied need to transform a list of work or jobs into an ordered, or sequenced, structure of which jobs are to be worked on first and which jobs are to be worked on at a later time. Claims 1 and 2 provide a structured method for transforming the list of work or jobs into a sequenced list of those jobs in a manner that prioritizes the work or jobs to a measure or measures that are correlated to an entity's strategic objective in order to maximize the strategic objective of the entity. As such, it is not just the re-arrangement of the list of work, the gathering or outputting of work, but rather the transforming of a list of work into tangible measures of how each job will affect an entity's strategic objective (by converting the list of work into strategic measures for each listed job) and then sequencing the work in a manner that has those jobs with the greatest impact on achieving the strategic objective being scheduled first. The specification provides examples of the importance of the conversion of the work to strategic measures in Para (0023 through 0028). In addition, the work must be scheduled based upon the strategic objective and upon the constraints to work as depicted in Para (0029 through 0034). As indicated in the specification, when a first constraint is scheduled to capacity, then the next open constraint is scheduled, even though the first job on the second constraint may not be the next unscheduled job that has the next greatest impact on achieving the strategic objective (that job may have to be run on the first constraint which is already loaded and therefore can not be run).

Therefore, the beginning list of work is transformed a first time to a list of work as measured by a strategic objective measure and then prioritized, and then scheduled based upon the constraints to the work as a second transformation.

Claim 9 has been modified as noted above and should thereby now be in compliance for examination, including the result of scheduling the independent and dependant jobs per the transformed listing of jobs.

### **Claim Rejections Under 35 U.S.C. 103**

Claim 1 Rejection. Applicant contends the following. It is not clear that Brown has “elected” a strategic objective by which to schedule tasks or activities as stated by the examiner at the bottom of the page 15 of the Office Action. While Brown provides “an algorithm that minimizes time duration project schedule for a sequence of job tasks”, there is never any discussion of the possible strategic objectives to Brown’s invention nor to the creation of the prioritization of those objectives and how time duration correlates to a strategic objective. “Minimizing project time” may not be the strategic objective at all, but merely a means to accomplish a strategic objective. For example, it is just as likely that the strategic objective was to increase profit or revenue, and Brown’s unspecified assumption that reducing time in project completion would increase profit or revenue.

Nor does Brown “j. select the constraint by which said work will be scheduled” or “k. prioritize the order of the constraints to schedule said work by”. Rather, Brown lists all of the resource requirements a specific task within a given project requires, Column 6, Table 1, and then through the PRST, Column 7, 8, 9 and 10, calculates how to schedule the tasks for minimizing time to completion through ACTIM and LFT and how to schedule based upon limited resources through MACTRES and MGRD, Column 2, Lines 37 to 51. All for simulations are then normalized. The normalized results are then run through the PRST algorithm in an iterative manner for 1000 iterations. At the end of the iterations, the result with the shortest duration span is printed out as the schedule, Column

5 line 6 through Column 6 line 4. As such, Brown does not teach selecting a constraint and prioritizing said constraint, but rather averaging all constraints (“resource type 1, 2 and 3”) simultaneously while minimizing time to project completion (the normalized ACTIM and LFT values). Brown, Column 3 lines 45 through 46 “The four priority rules are combined through an equal interval search technique by linear weighing.” As such, Brown is not selecting a constraint and prioritizing the order of constraints, but rather averaging all four priority rules in a selective iterative process.

m. of the present invention sorts the jobs, based upon the work schedule measure, from largest to smallest, that have the largest impact on the work schedule measure. Brown, in the PSRT formula Column 3, lines 49 and 50 utilizes the LFT, along with ACTIM, ACTRES and MGRD in an algorithm to establish the priorities, not LFT alone.

n. of the present invention schedules the jobs with the largest impact on the work schedule measure on the prioritized constraint first. Brown schedules the activities/task based upon the priority order as determined the PRST algorithm given above (which is an compilation of both the time to complete a project and the effective use of resources) while maintaining the precedence relationships and satisfying resource constraints. Therefore Brown is not scheduling by largest impact on a single constraint, but by shortest duration while optimizing multiple resources simultaneously.

Referring to Ouimet, the examiner rejects items d and e of the present invention, which refers to the “listing and selection of primary strategic objective measures”, by reference to Ouimet’s Para (0054 – 0069) which refers to Aggregate Measures Table as being used for the “goal or primary objective that invokes the decision variables” Para (0053). Examiner then rejects items g and h of the present invention, which refers to “defining and selecting measures for scheduling work”, with reference to Ouimet’s Para (0026 and 0054) which again refers to Ouimet’s primary strategic objective and measure. In the present invention, the measure used to schedule work is not always the strategic objective

measure as noted in Para (0029 - 0030) of the present amended specification. “the measure for scheduling work would be the same as that used for monitoring the primary strategic objective **11**, *but measured on a per part or per order basis*” (italics added). “However, when an entity is unable to convert the primary strategic objective measure **13** directly into the measure **15** for setting the schedule of the work to be done on a per part or per order basis, then a different measure **15** must be chosen that is consistent with and supportive of the primary strategic objective **11** and its measure **13**. For example, if the primary strategic objective **11** was to improve the company’s EBIT and the primary strategic objective measure **13** was chosen to be the entity’s EBIT, it is very unlikely that the entity would be able to measure **13** each job and/or order within the entity by each individual job and/or order’s EBIT directly. As such, the available measures **14** for the purposes of scheduling work might be such measures **14** as average gross margin per customer, average gross margin per order, average gross margin per job, the average dollar profit per job, the average margin percent per customer or a host of other possible measures **14**. Therefore, the list of measures for the work schedule measure are different than the measure for the strategic objective and not part of the Aggregate Measures Table of Ouimet.

The only time primary strategic objective measure of the present invention are depicted in the specification or the claims as being used to calculate the works schedule measure is where the strategic objective measure is capable of being converted into a per part or per order measure. Where that is not feasible a different measure, other than the strategic objective measure must be used.

Claim 5 Rejections. The argument for claim 1 presented above apply to claim 5 as well.

Claim 9 Rejections. The present invention of claim 9 (a) through (l) utilizes the first measure for the primary strategic objective to calculate the measures impact on each constraint and then prioritizes the constraints. The jobs in the prioritized constraints are

then calculated by using the works schedule measure, a second measure, and those jobs within the constraint then prioritized. The jobs are scheduled only once based upon the works schedule measure and the prioritized constraints. The process then continues through each successive constraint until all constraints and all jobs are scheduled. As noted above, Brown takes a project or a multitude of projects, each with their own subtasks, and through the PRST algorithm, runs all of the projects and tasks iteratively for 1000 iterations, applying a weighing factor to the iterations each time, thereby generating 1000 different schedules. Brown then prints out the schedule with the shortest time frame that “best” utilizes each of the available resources. In essence, Brown does the 1000 iterations in order to try and balance the desire to for quick project completion time with available resources.

Claim 2 Rejection. “b. Adding the impact of the said work schedule measure from the said scheduled job and/or order to the said impact of each of the said jobs and/or orders remaining in the said work queue” of the present invention is taking the calculated work schedule measure for a single job/order, once that job/order has been scheduled, and adding that calculated measure to each and every remaining job/order work measure, *but only after* “(a) removing the said scheduled job and/or order from the said work queue”. Brown does not add the impact of a work schedule measure to any other work schedule measure but rather, as noted above, normalizes four (4) different formulas for scheduling the same work and utilizes a linear weighing method to sum the four different formulas to total the entire work schedule at once. Then iterating the linear weighing method 1000 times and redoing the entire schedule 1000 times in search of the least time project completion model. Thus Brown is not scheduling jobs one at a time, removing the job from the job queue and adding the impact of the scheduled job to the remaining jobs. Brown is utilizing the linear weighing of each of the four models to calculate which combination of models at which weight of model provides the least time to project completion.

If the combination of Circirello's teaching "to remove this selected task" was applied to Brown, Brown's invention would fail to operate as claimed as the removal of a job once scheduled would affect or change the results of the next calculation as the PRST algorithm would be off by one job and the degradation would occur successively with each calculation. In addition, the 1000 iterations of the PRST would be impossible as once the jobs were scheduled a first time, there would be no jobs to schedule in a second iteration thus rendering Brown's invention unusable.

Similarly, with Ouimet's invention, it states in Para (0071) "In most cases the best result is obtained by allowing a user to select several optimization methods and compare the results obtained by using a variety of methods on the same data set." If a job was scheduled and then removed from the work queue, there could be no second optimization run as the scheduled job would no longer be available for a second or more optimization runs using different methods. And at Para (0027) "in regards to Fig. 1 the invention calculates a large number of scenarios and presents the results in graphic form so that the optimum decision envelope can be visualized..." . Once again, there would be only one scenario to look at rather than many and Ouimet's invention would fail to realize its intent.

Draman and Boonkhun have the same result. Draman utilizes four costing methodologies to compare their "performance". In each case, if a user were to schedule a job or task and then remove it from the work queue, the removal of the job would change either the availability of resources, change the activity based cost number or the constraint based cost number thereby changing the bottom line comparison each time a job was scheduled and removed from the work queue. At the end of the scheduling process, the traditional costing model, activity based costing model, absorption cost model and the constraint based cost model would end up either fully loaded or at zero cost with nothing to manage on or compare to. As such, removing a job from the job queue each time a job is scheduled would result in a failed analysis and the models would

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be useless. As Boonkhun relies upon Activity Based Costing, the same result as Draman occurs.

**Other:**

Although the prior amendment was signed in the upper left hand corner of the cover page, this corrected amendment is also signed at the bottom of the cover page and below.

In conclusion, applicant believes that the claims of the present invention, as amended and argued are in a position for re-evaluation and issuance.

Respectfully submitted,  
/jmcormick/  
John K. McCormick  
Registration No. 53527

Dated: October 1<sup>st</sup>, 2009  
I P Legal Center & McCormick Law Offices  
6781 Glacier Drive  
West Bend, WI 53090  
Telephone: (262) 629-5100  
Customer Number 36483